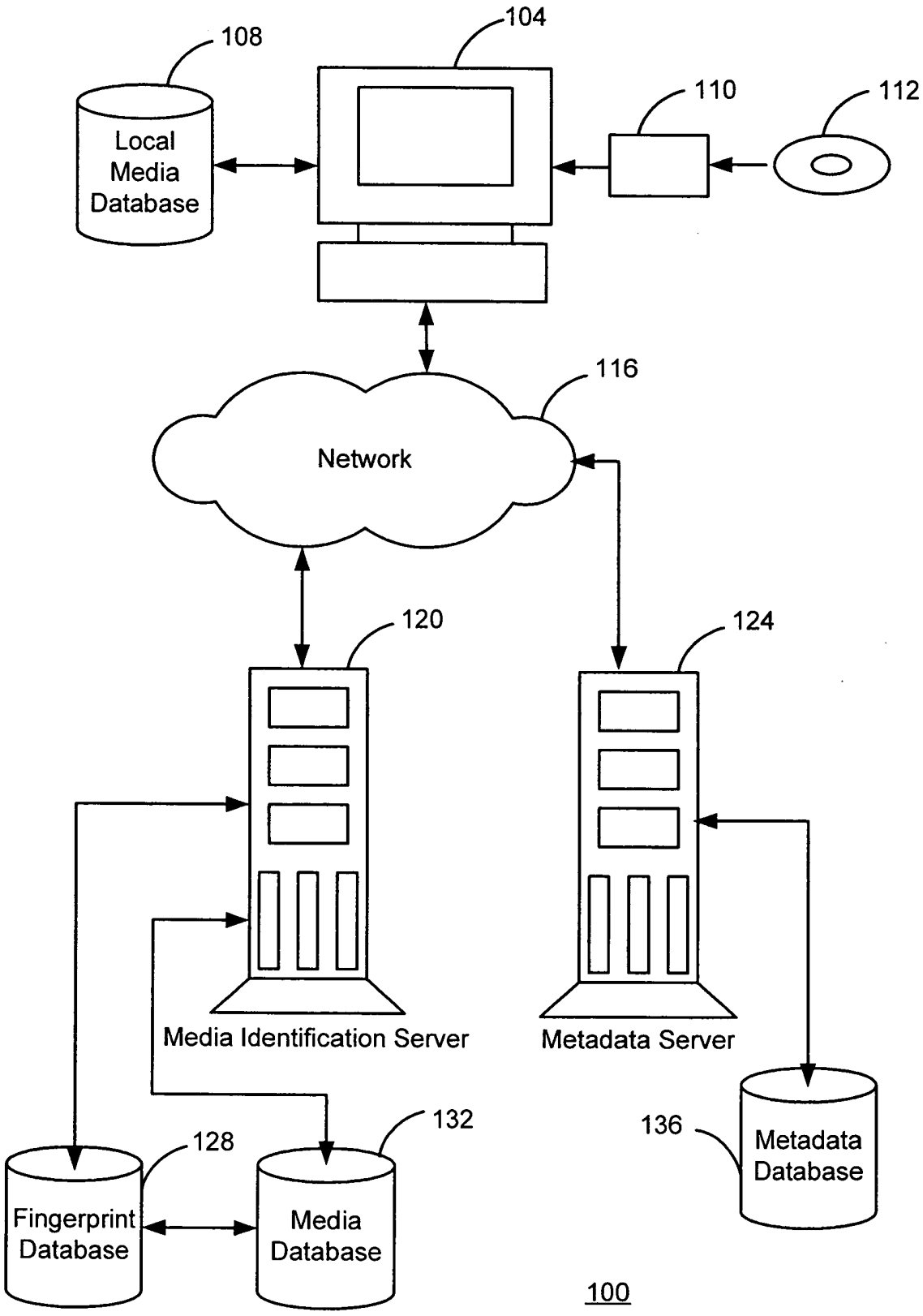

108
104
110
112
Local Media Database
116
Network
120
124
Media Identification Server
Metadata Server
132
128
136
Fingerprint Database
Media Database
Metadata Database
100

FIG. 1

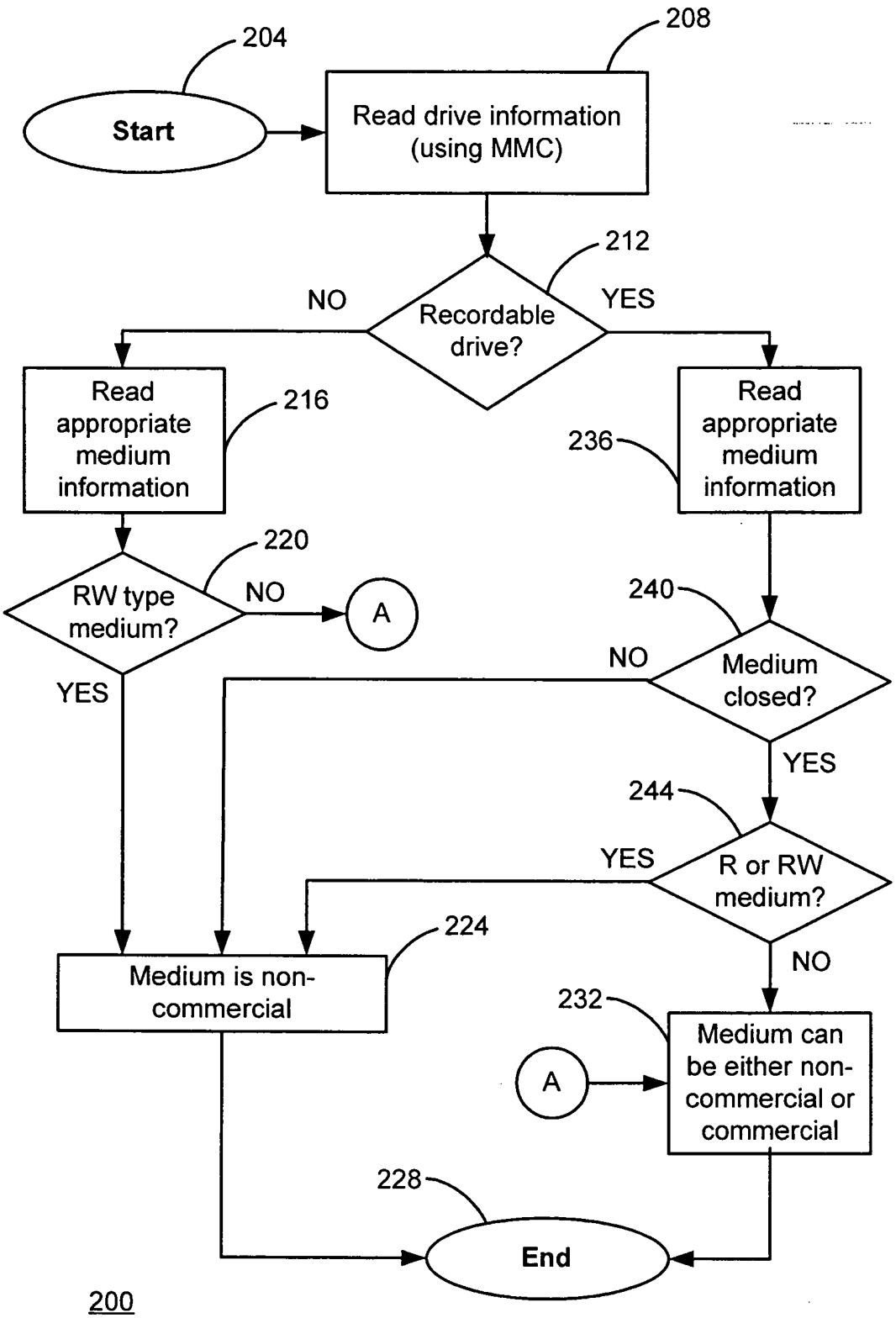

204
208
Start
Read drive information (using MMC)
212
NO
Recordable drive?
YES
Read appropriate medium information
216
Read appropriate medium information
236
220
RW type medium?
NO
A
240
NO
Medium closed?
YES
YES
244
YES
R or RW medium?
224
Medium is non-commercial
NO
232
A
Medium can be either non-commercial or commercial
228
End
200

FIG. 2

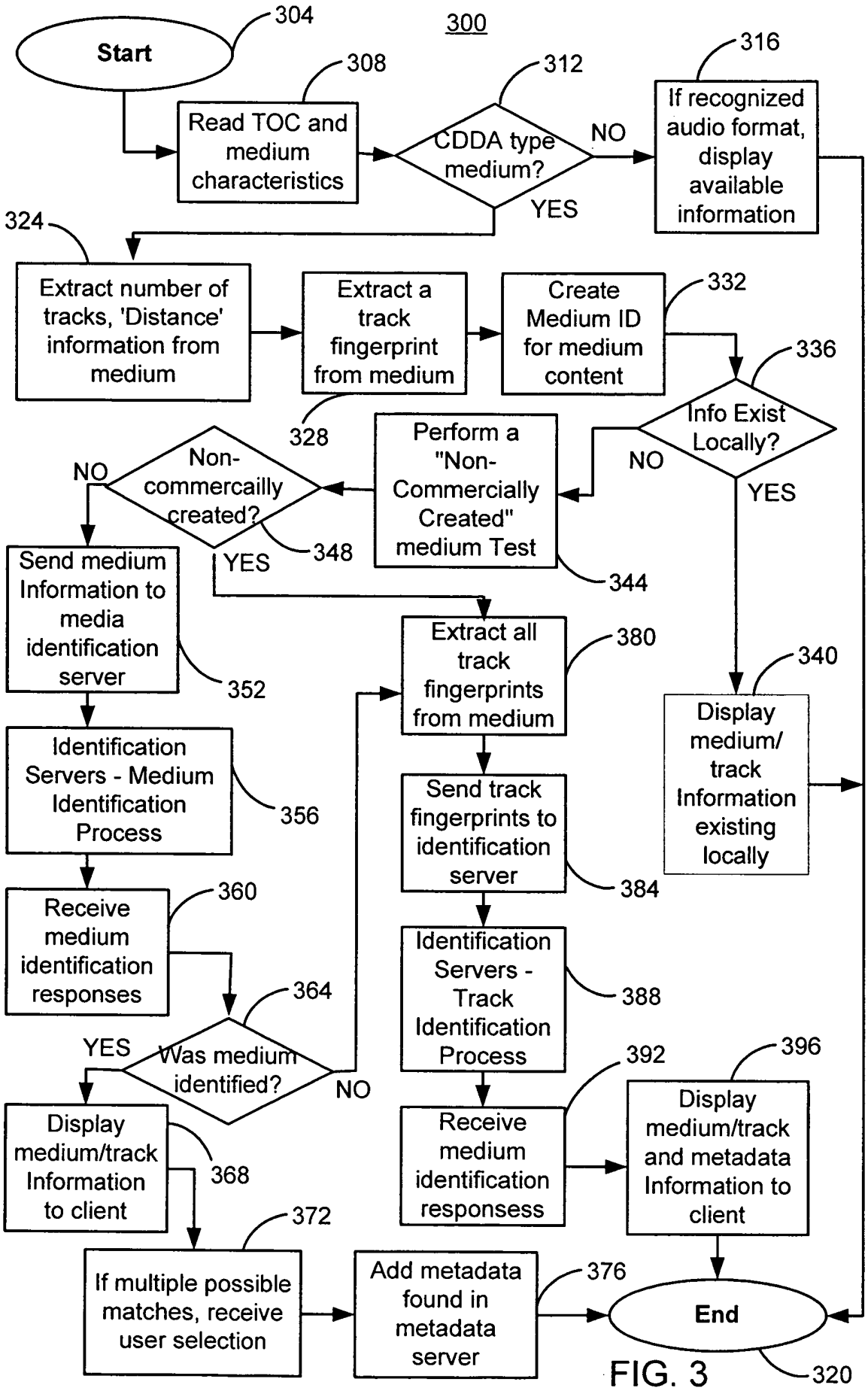

300
Start
304
Read TOC and medium characteristics
308
CDDA type medium?
312
NO
YES
If recognized audio format, display available information
316
Extract number of tracks, 'Distance' information from medium
324
Extract a track fingerprint from medium
328
Create Medium ID for medium content
332
Info Exist Locally?
336
NO
YES
Perform a "Non-Commercially Created" medium Test
344
Non-commercailly created?
348
NO
YES
Send medium Information to media identification server
352
Identification Servers - Medium Identification Process
356
Receive medium identification responses
360
Was medium identified?
364
YES
NO
Display medium/track Information to client
368
If multiple possible matches, receive user selection
372
Extract all track fingerprints from medium
380
Send track fingerprints to identification server
384
Identification Servers - Track Identification Process
388
Receive medium identification responsess
392
Add metadata found in metadata server
376
Display medium/ track Information existing locally
340
Display medium/track and metadata Information to client
396
End
320

FIG. 3

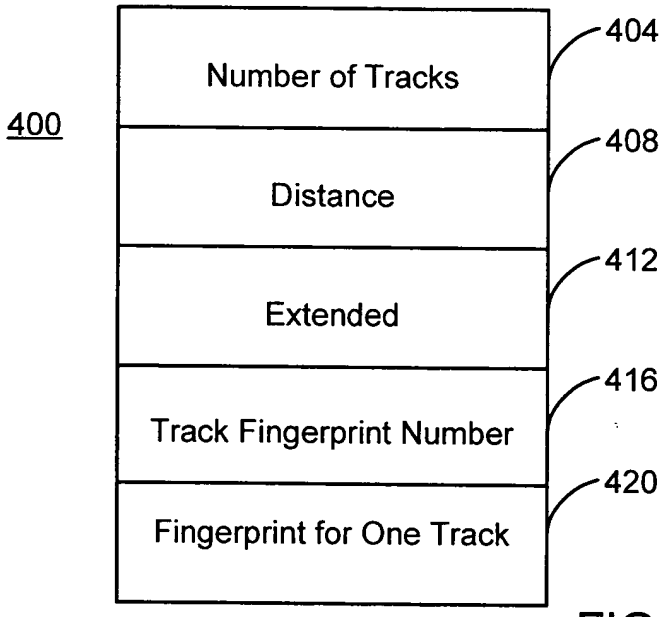

400
Number of Tracks
404
Distance
408
Extended
412
Track Fingerprint Number
416
Fingerprint for One Track
420

FIG. 4

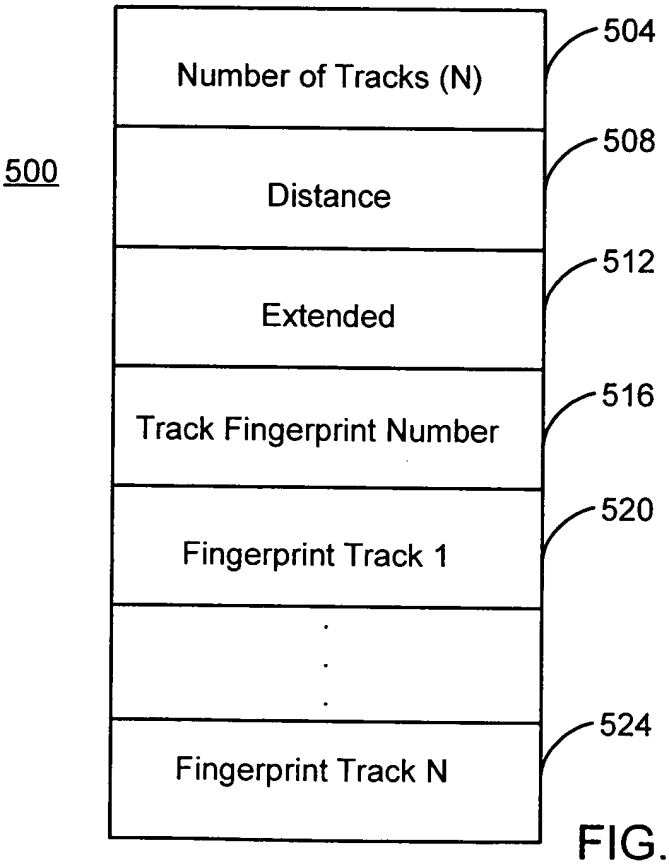
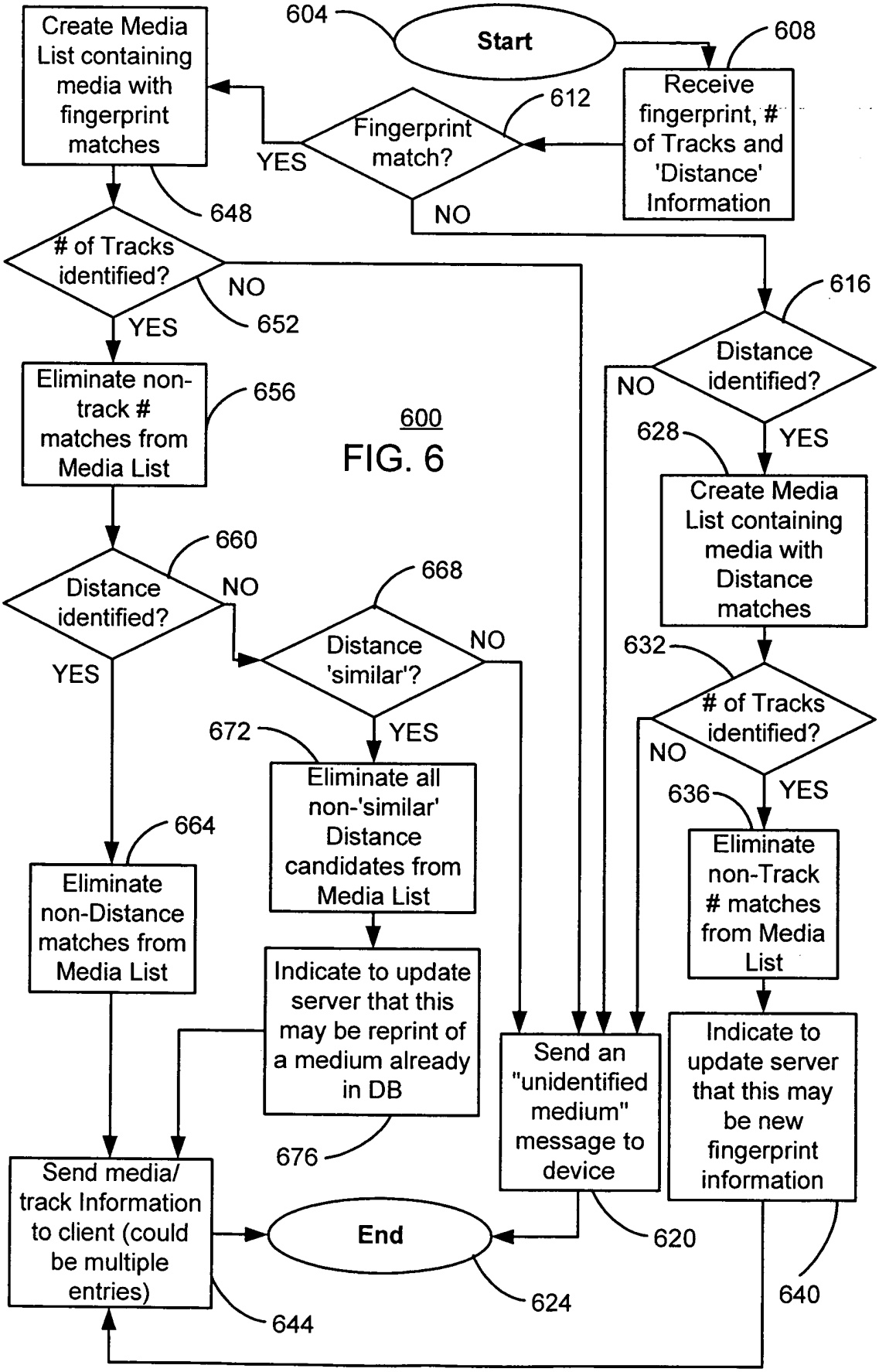

500
Number of Tracks (N)
504
Distance
508
Extended
512
Track Fingerprint Number
516
Fingerprint Track 1
520
Fingerprint Track N
524

FIG. 5


Start
604
608
Receive fingerprint, # of Tracks and 'Distance' Information
612
Fingerprint match?
YES
NO
Create Media List containing media with fingerprint matches
648
# of Tracks identified?
NO
652
YES
616
Distance identified?
NO
YES
628
Create Media List containing media with Distance matches
632
# of Tracks identified?
NO
YES
636
Eliminate non-Track # matches from Media List
Eliminate non-track # matches from Media List
656
600
FIG. 6
660
Distance identified?
NO
YES
668
Distance 'similar'?
NO
YES
672
Eliminate all non-'similar' Distance candidates from Media List
664
Eliminate non-Distance matches from Media List
Indicate to update server that this may be reprint of a medium already in DB
676
Send an "unidentified medium" message to device
620
Indicate to update server that this may be new fingerprint information
640
Send media/ track Information to client (could be multiple entries)
644
End
624

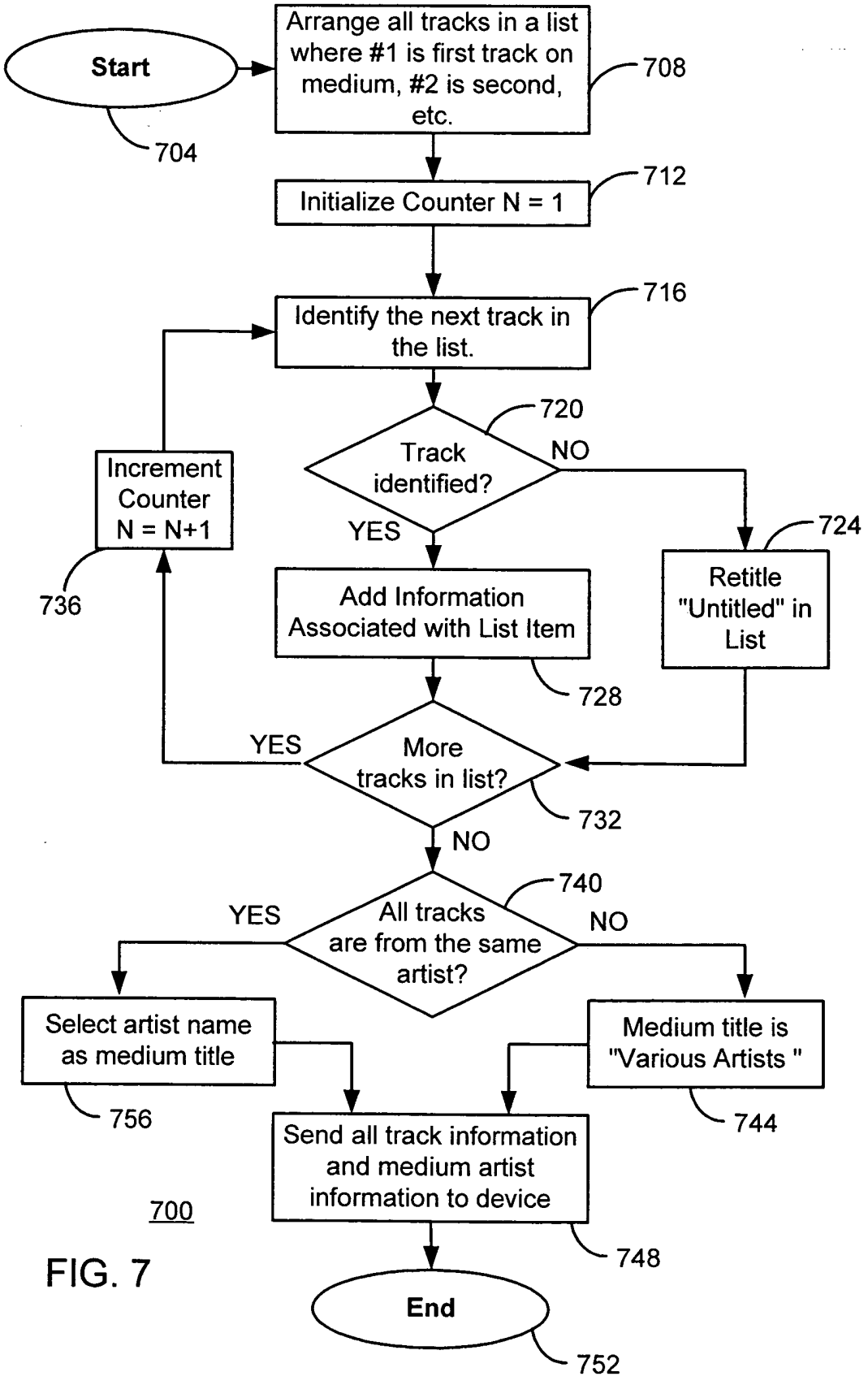

Start
704
Arrange all tracks in a list where #1 is first track on medium, #2 is second, etc.
708
Initialize Counter N = 1
712
Identify the next track in the list.
716
Track identified?
720
NO
YES
Increment Counter N = N+1
736
Add Information Associated with List Item
728
Retitle "Untitled" in List
724
More tracks in list?
YES
732
NO
All tracks are from the same artist?
740
YES
NO
Select artist name as medium title
756
Medium title is "Various Artists "
744
Send all track information and medium artist information to device
748
End
752
700

FIG. 7

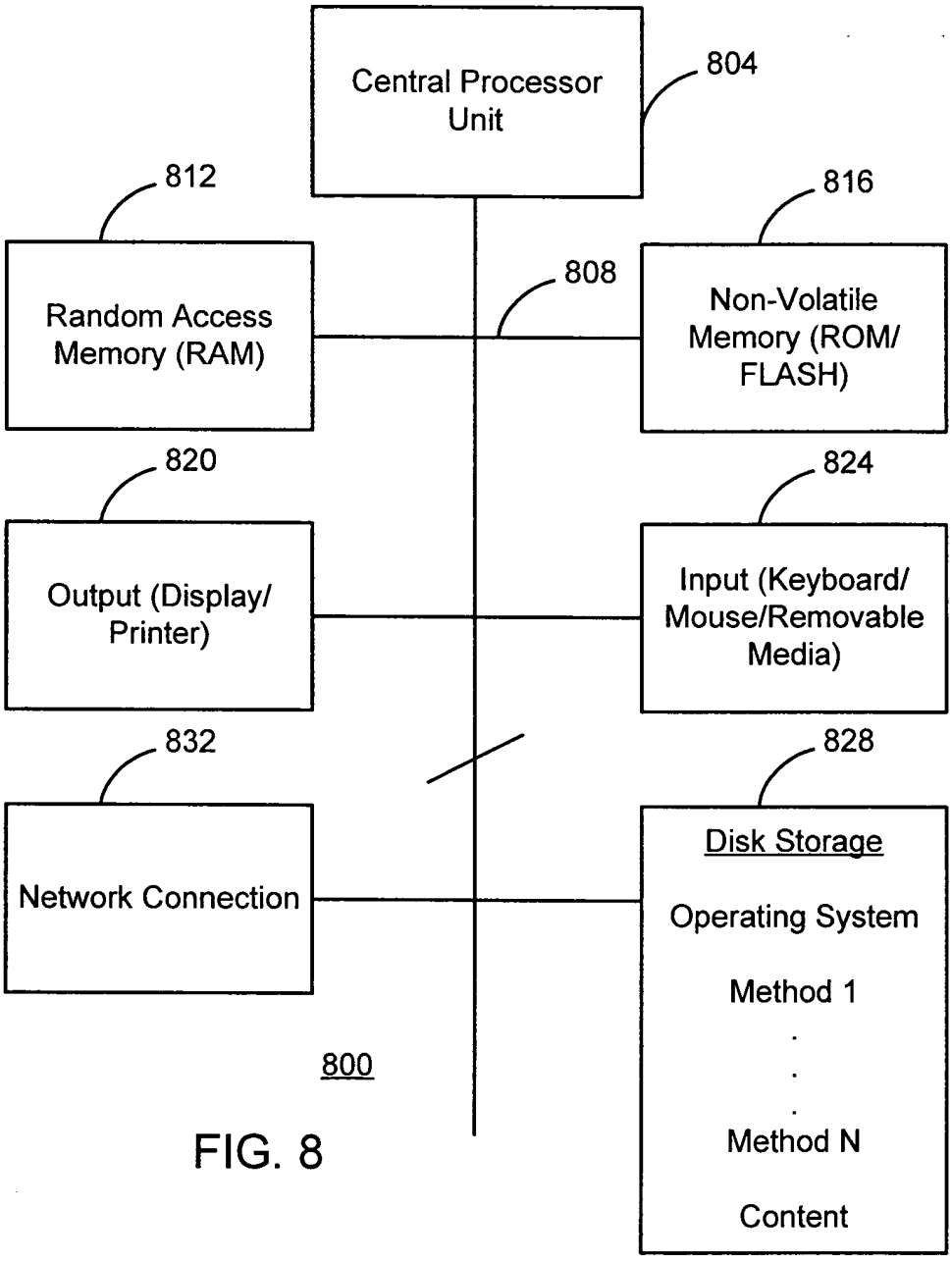

Central Processor Unit
804
812
816
Random Access Memory (RAM)
808
Non-Volatile Memory (ROM/ FLASH)
820
824
Output (Display/ Printer)
Input (Keyboard/ Mouse/Removable Media)
832
828
Network Connection
Disk Storage
Operating System
Method 1
Method N
Content
800

FIG. 8